Title: Handover Requirements for WATM Baseline Document

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Abstract: This contribution proposes enhancing the handover requirements in section 2.2 of the WATM baseline document with the handover requirements detailed in section 2 of contribution ATM Forum/97-0153.

1 Introduction

This contribution enhances the requirements outlined in the ATM Forum/96-989 and section 2.2 of the WATM baseline document. We propose that the following requirements should be transferred to the WATM baseline document.

2 Handover Requirements

2.1 Handover Latency

a) The total time for the completion of handover should be appropriate for the rate of mobility of the WMT or WN. The handover period should be such that the handover decision is still valid for the new WMT/WN position after the handover process is complete.

b) The switching of the active VCs from the old data path to new data should be as efficient as possible in order to minimise the interruption to cell transport. This can be a considerably shorter path time than that for the overall handover process.

2.2 Scalability

a) The handover procedure should support seamless handover between APs in a private network.

b) It should support handover between APs in different private networks connected by a public network (Billing may be an issue across the public network).

c) It should support handover between APs in public networks.

d) The handover procedure should also work on networks that contain non-mobile-enabled switches (where the handover procedure is implemented by APs with switching functionality).

2.3 Quality of Service (QoS)

a) The handover procedure should aim to preserve the requested QoS of all VCs at handover. This may not always be possible and some form of QoS re-negotiation and/or dropping of certain VCs on a priority basis may be required.

b) Information about resource allocation at a candidate AP should be advertised to the WMT/WN and to other APs in the network. A handover algorithm can then use this information to select the AP that will best support the requested QoS for active VCs. This information will also be useful for resource load balancing between radio adjacent APs.

2.4 Signalling Traffic

a) Handover signalling traffic should be kept to a minimum in order to reduce the load on the wired network and the air interface to the WMT/WN.

b) The type of signalling protocol, whether user plane or control plane, used for handover should take into consideration the processing load on intermediate switches.

2.5 Buffer Strategy

a) The handover procedure should not require modifications to existing network switch buffering hardware implementations.

b) There is no strong requirement for minimal buffering in itself, rather there should be a trade off between buffer delay and cell loss or cell reordering at handover depending of the traffic class of the active VC.

2.6 Data Integrity

a) Minimise cell loss but more importantly avoid cell duplication or cell re-ordering.

2.7 Group Handover

a) The handover procedure should support the efficient handover of multiple active VCs. This will be affected by the handover approach used.

2.8 Registration and Authentication

a) The handover of the WMT/WN should not compromise the established security between the WMT/WN and network.

3. Motion

Section 2 of this document should be moved to section 2.2 of the WATM baseline document.